

Exhibit A**Disclosure RSW8-2003-0289**

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Required fields are marked with the asterisk (\*) and must be filled in to complete the form.

**\*Title of disclosure (in English)**

Improved Methods of Preventing Shoplifting using RFID

**Summary**

Status	Final Decision (File)		
Final Deadline			
Final Deadline			
Reason			
Docket Family	RSW8-2003-0126		
*Processing Location	Raleigh - RSW		
*Functional Area	select (Horn: WebSphere System House - Technology Group (Kopkind,King)) Horn: WebSphere System House - Technology Group (Kopkind, King)		
Attorney/Patent Professional	Jeanine Ray/Raleigh/IBM		
IDT Team	select Marcia L Stockton/Raleigh/IBM Bryan Aupperle/Raleigh/IBM		
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*Owning Division	select AIM		
Incentive Program			
Lab			
*Technology Code	999		
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Response Due to IP&L	06/27/2003

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**\*Main Idea**

1. Background: What is the problem solved by your invention? Describe known solutions to this problem (if any). What are the drawbacks of such known solutions, or why is an additional solution required? Cite any relevant technical documents or references.

**Background**

Theft and shoplifting are problems for many retailers.

Several techniques exist to combat theft in the retail environment. Until recently it was common for pharmacies and clothing stores to tag expensive items with passive tags (flat metallic spirals forming passive RF antennae, about 2-3 cm in diameter) that are disabled at the point of sale after purchase; if not disabled the tag sets off an alarm as the merchandise passes between a pair of scanners as it exits the store.

Other retailers station an employee at the exit to visually verify that the merchandise in the customer's possession matches an itemized receipt that was issued at the point of sale. Of course, this approach intimidates and humiliates honest customers, and is expensive for the retailer.

Prior art methods are deficient in several respects. The expected near-ubiquity of RFID tags bearing item SKU numbers and unique item serial numbers, with small data memories that can be written at the point of sale, presents the opportunity for a better, less expensive and less humiliating approach. Another technology that could potentially play a role in a solution is the passive RFID tag that can be inexpensively printed, on demand, on an object.

2. Summary of Invention: Briefly describe the core idea of your invention (saving the details for questions #3 below). Describe the advantage(s) of using your invention instead of the known solutions described above.

**Abstract**

Disclosed is an improved method to prevent theft in a retail environment. The solution uses a combination of (1) the RFID tags on merchandise and (2) RFID data written at the point of sale on the merchandise-borne RFID tags themselves, on the receipt, or both. Matching is done at an RFID reader when the shopper/merchandise exits the premises to determine if the items carried were paid for.

3. Description: Describe how your invention works, and how it could be implemented, using text, diagrams and flow charts as appropriate.

At a point of sale, we compute a checksum from RFID-readable identifiers borne on each merchandise item being purchased. We write the checksum in an RFID-readable form on a sales receipt of a customer, preferably using a passive RFID print-on-demand technology. As the customer exits the premises carrying the merchandise and the receipt, an RFID reader non-intrusively reads the identifiers on the exiting merchandise and the checksum on the receipt. A checksum of the merchandise-borne identifiers is computed and compared against the checksum

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written on the receipt. A non-match indicates possible theft. Conventional means may be used to notify store personnel of the potential theft and/or stop the stolen merchandise from exiting the premises.

In an alternative embodiment, the RFID tags of the purchased items are written, at the point of sale, with a unique customer number associated with the purchaser. A possible theft is detected if the RFID tag on an item leaving the store does not match the RFID-readable loyalty card of the person accompanying it.

In a second alternative embodiment, a unique correlator is created at the point of sale when a customer buys a collection of items. This correlator is written to the RFID tags of all the items purchased and to the sales receipt. If any item departing the premises lacks a correlator matching that on the receipt, a possible theft of that item is detected.

In a variation on the second alternative embodiment, the correlator could be printed on the receipt and compared manually with the correlator read via RFID from each item exiting the store.

In yet another variation on the second alternative embodiment, the unique correlator is written to each of the items purchased (but not on the receipt). If the collection of items walking out of the store together includes any item lacking this same correlator, then that item is suspected of not having been paid for.

In a third embodiment the RFID tags of the items purchased need not be overwritten, but RFID identifiers corresponding to the items purchased are written on the receipt, preferably using passive print-on-demand RFID technology. The list of items is automatically read from the receipt at the exit and compared with the RFIDs read from the items.